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LEGAL ASPECTS OF THE
THREE MILE ISLAND ACCIDENT

Report of the Legal Subcommittee
to the Governor's Commission on
Three Mile Island

Harrisburg, Pennsylvania
December, 1979

FOREWORD

On May 14, 1979, Pennsylvania Governor Dick Thornburgh charged the Governor's Commission on Three Mile Island with studying and evaluating the consequences of the March 28 accident. A Legal Impact Subcommittee was assigned to investigate the legal implications of the Three Mile Island accident. This subcommittee was composed of Clifford Jones, Secretary of the Department of Environmental Resources; Frank Townend, Esquire, Brigadier General in the Pennsylvania National Guard and partner in the law firm of Silverblatt & Townend, Wilkes-Barre, Pennsylvania; and Thomas W. Pomeroy, Jr., retired Justice of the Supreme Court of Pennsylvania and now counsel to the law firm of Kirkpatrick, Lockhart, Johnson & Hutchison in Pittsburgh, Pennsylvania. This subcommittee was assisted in both research and writing by Karin Carter, Esquire, Deputy Attorney General of Pennsylvania attached to the Department of Environmental Resources; Robert Kelly, Esquire, Deputy Attorney General of Pennsylvania in the Department of Justice; and J. Michael Ewing, Esquire, of the law firm of Kirkpatrick, Lockhart, Johnson & Hutchison.

A digest of this subcommittee's report and recommendations is included in the Report of the Governor's Commission on Three Mile Island. It was felt, however, that it would be useful to have the full report of the Legal Impact Subcommittee available in printed form to persons who might be interested in this component of the nuclear issue. Hence this separate document.

William W. Scranton, III
Chairman
Governor's Commission on
Three Mile Island

Harrisburg, Pennsylvania
February 28, 1980

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LEGAL ASPECTS OF THE
THREE MILE ISLAND ACCIDENT

Report of the Legal Subcommittee to the Governor's
Commission on Three Mile Island

INTRODUCTION

In examining the consequences of the Three Mile Island occurrence, it is natural to ask what the legal aspects of that occurrence might be. We have given consideration to that question and find that these aspects involve proceedings both in courts and before regulatory bodies, that this litigation implicates the statutory and decisional law of both the federal and state governments, and that it embraces private persons as well as public bodies. Although the field of nuclear energy is relatively new as a legal topic, it has received an extensive amount of attention in legal literature and in legislation in the last twenty-five years and will undoubtedly receive much more as a result of the Three Mile Island accident. Without attempting to present a digest of this body of law and legal writing, we think it useful to set forth the legal framework which prevailed at the time of the Three Mile Island accident. Against this background it will then be possible to examine the legal impact which the accident had on affected persons and institutions and outline the proceedings which have come into being as a consequence of that event. This, in turn, will be followed by a consideration of the laws dealing with emergency response to disaster situations, including those which might result from a nuclear accident.

The primary concerns stemming from the Three Mile Island experience are, of course, what happened, why it happened, how serious was what happened, how likely is it to happen again, and what can be done to prevent it happening again. In terms of the future of nuclear power in this country, the ultimate question is one of safety: Can nuclear power plants be located, constructed and operated so that the safety of the public, and indeed of those persons operating the plants, is reasonably assured? A collateral question is: assuming that a nuclear incident more serious than TMI may some day occur, is the ability to respond to such an emergency so as to protect the lives of persons and property assured by adequate planning and coordination among the governmental units and private institutions involved?

What quickly emerges from a review of the pertinent law is that insofar as the first concern--safety--is a matter of laws and regulations, it is almost exclusively within the federal domain. This is so because the use of atomic energy in this country has been controlled or monopolized by the federal government from the beginning, and the production of electric power through the use of nuclear reactors is performed by private industry only under license from the federal government. Thus the statutory law and the extensive regulations governing the industry including the safety of the entire process are federal enactments. Under the supremacy clause of the constitution, these federal enactments take precedence over any state legislation, and indeed have "preempted" the field. The report which follows will indicate the areas in which states can nevertheless have a part in the federal decision-making process as it concerns safety factors, and also other phases of the nuclear energy industry which are governed by state laws and regulations.

The collateral concern of emergency response capability, in contrast, is a matter which is largely within the control of the states. This report will outline the Pennsylvania statutory provisions in this area.

Recommendation for changes in applicable laws and regulations in the light of the TMI experience will conclude this section of the Report.

The Subcommittee does not consider that the Commission has been charged with ascertaining the causes of the

TMI accident or assessing blame in connection therewith. Thus, whether there was fault in the design, construction or operation of the plant, whether regulations or safety procedures were overlooked or ignored, whether the regulations themselves were adequate or technologically sound, are questions which are outside the scope of this report. A number of these questions have been addressed in the Report of the President's Commission on the Accident at Three Mile Island, published in October, 1979. Others may be resolved by litigation resulting from the accident.

I

THE LEGAL SETTING IN WHICH TMI OCCURRED.

A. Atomic Energy Act.

As mentioned in the introduction, the dominating law in the field of atomic energy is in the form of legislation by the federal government. This legislation began when Congress passed the Atomic Energy Act of 1946 ("the Act"). Since the principal use of atomic energy at that time was for military purposes, Congress was primarily concerned with carrying out its constitutional responsibility of assuring the common defense and security in the development of nuclear power. Therefore, the Act created a government monopoly for the production and use of fissionable material. Control over these aspects of nuclear energy was vested in the Atomic Energy Commission ("AEC"), which was created by the Act. Ownership of all nuclear production facilities and fissionable material was placed in the AEC as agent of the United States.

In 1954, Congress recognized the need to revise the Act in order to permit private enterprise to utilize the rapid technological and scientific advances in the non-military uses of atomic energy. Relying on its constitutionally granted powers over common defense, interstate and foreign commerce and promotion of the general welfare, Congress amended the Act to permit ownership of nuclear production and utilization of facilities by persons who obtained a license from the AEC. Absent such a license, exclusive ownership of such facilities remained with the AEC. The 1954 amendments also authorized private ownership of byproduct material and leasing of special nuclear material, but only by persons licensed by the Commission.

On September 2, 1957, Congress further amended the Atomic Energy Act by passing the Price-Anderson Act, the stated purpose of which was to "protect the public" by assuring funds up to certain limits wherewith to pay damage claims arising from nuclear incidents and to "encourage the development of the atomic energy industry" by placing limits on the amount of a licensee's public liability from a nuclear incident. This statute is described more fully in part IV of this report.

The Act was again amended in 1959 to allow states to assume (and the AEC to discontinue) certain regulatory authority over byproduct, source and special nuclear materials in quantities not sufficient to form a critical mass. This transfer of regulatory authority to the states is accomplished by an agreement between a state governor and the AEC. Pennsylvania has passed an Act authorizing such an agreement but, to date, no agreement has been entered.[1] Under these amendments, a state is only permitted to regulate such things as use and disposal of reactor produced isotopes. Regulation of nuclear power plants, which utilize nuclear materials in amounts sufficient to form a critical mass, is not permitted by the 1959 amendments. The AEC retained authority over "construction and operation of any production or utilization facility."

In 1974, the Congress enacted the Energy Reorganization Act, which transferred the licensing and regulatory functions of the Atomic Energy Commission to the Nuclear Regulatory Commission. (42 U.S.C. §5841(f)). The AEC's previous research and development functions were transferred to the Energy Research and Development Agency (ERDA) and, later, to the Department of Energy. Thus, while the NRC is the successor agency to the AEC, it retains only licensing and regulatory functions.

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[1] The Atomic Energy Development and Radiation Control Act, Act of January 28, 1966, P.L. (1965) 1625, §102, 73 P.S. §1102.

B. Scope of Responsibilities of the Nuclear Regulatory Commission.

Under the Atomic Energy Act, as amended, the NRC now has responsibility for the licensing, inspection and enforcement functions applicable to nuclear power plants. The NRC licensing process is a lengthy two-tiered process. First, the applicant applies for and receives a construction permit. Second, after construction has been completed, the applicant must obtain an operating license. At both levels of the process, public adjudicatory hearings are held by a three-member Atomic Safety and Licensing Board at which the NRC staff and the applicant are represented, along with citizen intervenors and state agencies who desire to participate. The Board may deny the permit or license or grant it with such conditions as it deems necessary.

The Board must consider not only whether the NRC's siting and operating regulations have been complied with, but also whether the NRC has fulfilled the responsibilities imposed upon it by the National Environmental Policy Act of 1969 ("NEPA").[2] This statute requires the preparation of environmental impact statements ("EIS") for all major federal actions which significantly affect the human environment. An EIS must be completed for every proposed nuclear power plant prior to the hearings on the operating license. Federal case law has established that NEPA requires a balancing by the NRC of the environmental, technological and economic aspects of a proposed project. It is also established that in discharging its NEPA duties, the NRC must minimize environmental harm attributable to the proposed project.

After an operating license has been granted, the NRC continues to administer its regulatory functions by means of inspection and enforcement activities.

Another important aspect of nuclear power production which heretofore lay within the purview of NRC regulatory authority was the disposal of high level nuclear waste. This has presented a long-term, technological problem which is yet to be resolved. Alternative measures are still under discussion and no disposal sites for high-level waste have been established. The legal structure for disposal, however, is in place and ready to function once the technical problems have been resolved. The former NRC authority in this area is now in the Department of Energy. This includes: (1) control over existing federal facilities for treatment and storage of nuclear waste, (2) establishment of facilities and programs for treatment and disposal of nuclear waste, and (3) establishment of user fees for nuclear waste treatment or storage facilities.[3]

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[2] 42 U.S.C. § 4321.

Low-level waste disposal is also licensed by the NRC under regulations which provide, in part, that such disposal may only be carried out on state or federal land.[4]

C. Impact of other Federal Statutes on Regulation of Nuclear Power.

In addition to the Atomic Energy Act of 1954, as amended, certain other federal statutes may have impact upon the regulation of nuclear power. Among these are the National Environmental Policy Act,[5] the Federal Water Pollution Control Act,[6] and the Clean Air Act.[7] The National Environmental Policy Act was discussed previously at page 8. This section is designed to point out briefly the relationship between the latter two statutes and the AEA.

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[3] 42 U.S.C. § 7133(a)(8).

[4] 10 C.F.R. § 20.302(b).

1. Federal Water Pollution Control Act.

The relationship between the Federal Water Pollution Control Act ("FWPCA") and the Atomic Energy Act of 1954, is exemplified in the United States Supreme Court decision in *Train v. Colorado Public Interest Research Group, Inc.*, ("*Train*").[8]

Under the FWPCA the Environmental Protection Agency ("EPA") is empowered to regulate the discharge of pollutants into navigable waterways. The term "pollutant" under the Act is defined to include radioactive materials. The EPA, however, excluded "source, special nuclear and byproduct material" from the scope of its regulations. In Train, suit was brought to require regulation by EPA of such materials. The plaintiffs claimed that regulation was required because of the inclusion of radioactive materials within the definition of the term pollutant.

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[5] 42 U.S.C. § 4321, *et seq*.

[6] 33 U.S.C. § 1251, *et seq*.

[7] 42 U.S.C. § 7401, *et seq*.

[8] 426 U.S. 1, 48 L.Ed. 2d 434, 96 S.Ct. 1938 (1976).

The Supreme Court held that Congress had not intended by the enactment of the FWPCA to authorize the Environmental Protection Agency ("EPA") to regulate the release of source, byproduct, and special nuclear materials, and that the jurisdiction of the Atomic Energy Commission (predecessor of NRC) in this area was supreme. The Train decision was based on the legislative history surrounding the adoption of the FWPCA. While this decision is not based on preemption (the EPA and the AEC were both federal agencies), it does demonstrate the belief of Congress that the AEC was the better qualified of the two to deal with this subject.

The EPA does, however, play a role in protecting the environment from excessive radiation attributable to materials regulated under the Act. Under Reorganization Plan No. 3 of 1970, 5 U.S.C. Appendix II, at 96 (Supp. 1979), certain functions which were previously performed by the AEC were transferred to the EPA. The EPA and the NRC have explained the division of authority as follows:

> "EPA was to set generally applicable radiation standards, limiting the total amount of permissible radiation in the environment from major categories of sources, while the AEC was to prescribe the limitations applicable to discharges of licensed materials from particular sources which contribute to the total." Joint letter of the EPA, the NRC and the ERDA, _quoted in_ _Train_, _supra_, n.20.

The regulations promulgated by the EPA under this division of authority are found at 40 C.F.R. § 190.01, _et_ _seq_.

2. _Clean Air Act_.

The provisions of the Clean Air Act can be compared with those of the FWPCA. In 1977, Congress amended the Clean Air Act to define the term "air pollutant" to include "any air pollution agent or combination of such agents, including any . . . radioactive (including source material, special nuclear material, and byproduct material) substance or matter which is emitted into or otherwise enters the ambient air."[9] Thus, Congress specifically intended to include the pollution from nuclear power plants within the scope of this Act.[10]

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[9] 42 U.S.C. § 7602(g).

[10] _See also_ H.R.Rep. No. 95-294, at 42 (1977); _reprinted at_ [1977] _U.S. Code Cong. & Ad. News_, 1079, 1120, Conference Report No. 95-564, at 141-43, _reprinted at_ [1977] _U.S. Code Cong. & Ad. News_, 1502, 1522-24.

It should be noted that according to the House Conference Report on the 1977 amendments the NRC can promulgate stricter standards than those of the EPA. Moreover, according to the same report, states are not foreclosed from setting and enforcing stricter air pollution standards for radiation than the federal standards, and Northern States Power Co. v. State of Minnesota, discussed below at page 16, would not apply in the context of radioactive air pollution.[11] The NRC does, however, retain residual authority to disapprove emission standards upon a showing that "public safety would be significantly endangered if compliance . . . were required, i.e. that there is no safe way available to comply . . . ."[12]

D. State and Local Regulation.

1. Nuclear Hazards--The Doctrine of Preemption.

In order to discuss the limited role of states in regulating radiological hazards, it is important to have a basic understanding of the "doctrine of preemption." This doctrine is a derivative of the supremacy clause of the United States Constitution which provides that:

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[11] Conference Report No. 95-564, at 143, reprinted at [1977] U.S. Code Cong. & Ad. News, 1502, 1524; see also 42 U.S.C. § 7416.

[12] Conference Report, Clarifying Statement, 123 Cong. Rec. H8662, reprinted at [1977] U.S. Code Cong. & Ad. News, 1570, 1571.

> "[T]his Constitution, and the Laws of the United States which shall be made in pursuance thereof . . . shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any thing in the Constitution or Laws of any state to the contrary notwithstanding."

There are three independent tests for determining whether a particular state statute or regulation violates the supremacy clause and is therefore unconstitutional. First, where a state law conflicts with federal legislation in such a way that it is physically impossible to comply with both laws, then the state must yield to the federal enactment. Second, Congress may expressly provide that a federal statute is exclusive. In this situation, state regulation is prohibited even though it does not conflict with the federal regulation. Finally, absent either a direct conflict between federal and state laws or an express declaration by Congress that an act shall provide the exclusive regulation, it may be found that the Congress nevertheless intended to preclude state regulation of a particular subject matter. Factors which tend to demonstrate an intent by Congress to preempt an area include: (1) pervasive regulation by Congress and federal agencies of a particular subject matter, (2) the need, based on the subject matter, for uniform treatment throughout the country, and (3) the extent to which the state law creates an obstacle to achieving the legitimate objectives of Congress.[13]

The Atomic Energy Act of 1954 did not contain an express declaration on the part of Congress that it was intending to preempt the area. The effect of the Act, however, was to relinquish, for the first time, an absolute governmental monopoly in accordance with and subject to pervasive licensing and operating regulations designed to protect the public from the hazards of radiation exposure. Prior to any litigation on the subject, a number of leading authorities had concluded that state regulation of radiological hazards had been foreclosed under the doctrine of preemption.[14]

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[13] Northern States Power Co. v. Minnesota, 447 F.2d 1143 (8th Cir. 1971), aff'd mem., 405 U.S. 1035 (1972); Note, Preemption Under the Atomic Energy Act of 1954; Permissible State Regulation of Nuclear Facilities' Location, Transportation of Radioactive Materials and Radioactive Waste Disposal, 11 Tulsa L.J. 397 (1976).

[14] See, e.g., E. Stason, S. Estep & W. Pierce, Atoms and the Law, 1058-74 (1959). In its report on the 1959 amendments to the AEA, the Joint Committee on Atomic Energy stated that the AEC would have "exclusive authority to regulate for protection against radiation hazards until such time as the state enters into an agreement with the Commission to assume such responsibility." S. Rep. No. 870, 86th Cong., 1st Sess., reprinted in (1959) U.S. Code Cong. & Ad. News, 2883. The 1959 amendments do not affect nuclear power plants. It seems clear, therefore, that the Joint Committee believed that states were preempted from regulating in the area.

Several attempts have been made by states to regulate nuclear power plants. In at least three cases, state or local regulatory attempts have been stricken by the courts.

The leading case, which has been cited previously, is Northern States Power Co. v. Minnesota.[15] In this case a privately owned power company constructed a nuclear power plant in Minnesota under a permit issued by the AEC. The company thereafter applied for a waste disposal permit as required by state law. The issuance of the state permit was conditioned upon company compliance with state regulations governing the permissible level of radiation in the waste materials. The state regulations were stricter than those promulgated by the AEC. The state defended its position in part contending that the regulation was permissible for the health and welfare of its citizens under the police power. Relying heavily on the legislative history of the AEA, the court concluded that Congress intended to preempt the field and that a state could not regulate the level of radiation discharged from the plant.

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[15] 320 F. Supp. 172 (D. Minn. 1970), aff'd., 447 F.2d 1143 (8th Cir), aff'd. mem., 405 U.S. 1035 (1971). The result of the Northern States Power case has been altered to a limited extent by the 1977 amendments to the Clean Air Act discussed at p. 13, supra.

In a second case, a New York City ordinance requiring a health permit for the operation of a nuclear reactor by Columbia University was struck down by the court on the ground that the ordinance attempted to regulate radiation hazards.[16] Columbia University subsequently decided to cancel the project and, therefore, the City's appeal was dropped.

The third case, Pacific Legal Foundation v. State Commission,[17] involved a California statute, passed in 1976, which effectively prohibited the construction of new nuclear power plants until a technology for the disposal of high-level nuclear wastes had been developed. A utility employee who lost his job, partly because of this Act, brought a suit to challenge its legality. The court held that Congress had implicitly foreclosed state legislation and that this statute was unconstitutional because it created an obstacle to the purpose and objective of the AEA. This decision is currently on appeal to the Ninth Circuit.

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[16] U.S. v. City of New York, 463 F. Supp. 604 (S.D. N.Y. 1978).

[17] 472 F. Supp. 191 (S.D. Cal. 1979).

2. Permissible State Regulation--Matters other than Radiation Hazards.

Section 274(k) of the Atomic Energy Act,[18] provides that "[n]othing in this section shall be construed to affect the authority of any State or local agency to regulate activities for purposes other than protection against radiation hazards." The question of what constitutes regulation for the protection against radiation hazards may be easier to answer in theory than in practice. For example, in the Pacific Legal Foundation case discussed previously, Commission attorneys argued that the California statute was enacted because of the economic uncertainty about the future cost of storing and disposing of high level wastes. The argument that the Act was an economic measure was rejected by the court. The fact that there was an express or stated purpose for the Act other than protecting against radiation hazards did not prevent the court from analyzing the effect of the statute which was effectively to preclude the construction of new nuclear power plants.

It is generally felt that so long as state regulation does not attempt to regulate radiation levels and does not attempt to single out nuclear power plants for special treatment, the state may adopt regulations which cover nuclear power plants. Of course, the question of whether any particular legislation is permissible must be determined on a case by case basis. Examples of areas where regulation does occur are set forth below.

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[18] 42 U.S.C. § 2021(k).

(a) Need for additional generating capacity.

It is generally believed that a state properly may regulate matters regarding power supply and consumption, e.g., the need for additional generating capacity in the state.[19] Under this view, a state could preclude the installation of additional power plants although the state may not discriminate against nuclear power plants. The determination of need will typically fall within the authority of the state body that regulates utilities.

The Pennsylvania Public Utility Commission ("PUC") currently has certain minimal, indirect control of this nature through its rate-making powers. A utility is permitted to earn a just and reasonable return on the fair market value of its property used and useful in the public service. While the PUC cannot prohibit the construction of a new generating facility by a utility with a certificate of public convenience, the PUC could conceivably determine that the facility was not used and useful in the public service and prevent the facility from being included in the rate base. This power to control is probably more theoretical than practical since once a plant is operating it is difficult to find that it is not used or useful.

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[19] See, e.g., Note, Slaying the Nuclear Giants: Is California's New Nuclear Power Plant Siting Legislation Shielded Against the Attack of Federal Preemption?, 8 Pacific L.J. 741, 766 (1977).

There is currently a bill in the Pennsylvania Legislature, S. B. 1032, which would require the issuance by the PUC of a "certificate of necessity" before a utility could acquire a generating facility, either nuclear or non-nuclear, with a capacity of 50 or more megawatts. Under the bill, the PUC would be required to determine that the present or future public need requires the additional generating capacity.

(b) Plant Siting--Zoning.

The use of zoning to regulate plant location is permissible as long as nuclear power plants are not treated differently than conventional power plants and the zoning scheme is in compliance with the zoning laws. Generally, questions of plant location are left to local zoning authorities under the Pennsylvania Municipalities Planning Code.[20] The PUC does not have specific authority to regulate the siting of a power plant. Under section 613 of the Municipalities Planning Code, however, the PUC does have authority, in effect, to override the Act if it determines after a public hearing that the proposed site is reasonably necessary for the convenience or welfare of the public.

(c) Other areas of regulation.

Examples of areas where Pennsylvania statutes affect nuclear power plants can be found in the Fire and Panic Act,[21] the Boiler Act,[22] and the Pennsylvania Clean Stream Law.[23]

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[20] Act of July 31, 1968, P.L. 805, § 101 et seq. as amended, 53 P.S. § 10101 et seq.

[21] Act of April 27, 1927, P.L. 465, as amended, 35 P.S. § 1221, et seq.

[22] Act of May 29, 1929, P.L. 1513, 35 P.S. § 1301, et seq. This Act, administered by the Department of Labor and Industry, requires certificates of operation establishing pressure limits for any closed vessel containing water heated under pressure or vacuum. See 4 Pa. Code § 3.1, et seq. The Department of Labor and Industry did inspect the boiler at TMI-2 before it was placed into operation.

[23] Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. § 691.1, et seq.

Under the last-cited statute, the discharge of effluent into the waters of the Commonwealth is prohibited except with a permit and in compliance with the regulations promulgated by the Department of Environmental Resources. The Pennsylvania Clean Stream Law does not regulate the level of radiation in the effluent.

Although the cataloging in this section 2 is not intended as an all-inclusive listing of the areas in which a nuclear power plant may be regulated by a state, it may help to demonstrate the boundaries of permissible state regulation in light of the doctrine of preemption.

3. Attempts to regulate in other states.

In addition to the Minnesota and California statutes discussed in connection with the Northern States Power and Pacific Legal Foundation cases, a number of states have attempted to regulate nuclear power plants in various ways.[24]

Vermont, for example, requires the state legislature to determine that the proposed facility will "promote the general welfare."[25] There is virtually no guidance as to what is required to meet the statutory requirement.

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[24] See, e.g., Note, Application of the Preemption Doctrine to State Laws Affecting Nuclear Power Plants, 62 Va. L. Rev. 738, 746 n.69 (1976).

[25] Vt. Stat. Ann. tit. 30, sec. 248(c)(Supp. 1976).

In contrast, Oregon has adopted a very comprehensive statutory scheme which creates a Department of Energy and an independent Energy Facility Siting Council.[26] No power plant (whether nuclear or not) may be constructed in Oregon unless the Council has issued a site certificate for that facility. The considerations governing issuance of the certificate include environmental impact, public health and safety, federal and local regulations, aesthetics, and projected need for power to be supplied by the facility. The Council may also designate areas of the state as suitable or unsuitable for certain kinds of power plants.

It cannot be safely assumed that either of these statutes constitutes permissible regulation. Often this will depend upon whether the statute is applied to discriminate against or unduly hinder the development of nuclear power plants.

4. The Pennsylvania Atomic Energy Development and Radiation Control Act.

In 1966, the Pennsylvania Atomic Energy Development and Radiation Control Act[27] was passed. The Act created the

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[26] Ore. Rev. Stat. Ann. §§ 469.010-.570.

[27] Act of January 28, 1966, P.L. (1965) 1625, § 1 et seq. 73 P.S. § 1001 et seq.

Advisory Committee on Atomic Energy Development and Radiation Control, gave certain powers to the Department of Commerce and the Department of Environmental Resources, ("DER")[28] and authorized the governor to enter into an agreement with the federal government pursuant to the 1959 amendments to the Atomic Energy Act of 1954.

The Advisory Committee reviews and evaluates policies and programs relating to the development and control of atomic energy, and makes appropriate recommendations to the Department of Commerce and DER. The Department of Commerce is charged with the responsibility generally to coordinate and promote state policies regarding the development of atomic energy resources in the Commonwealth.

DER has the primary responsibility for regulating and controlling radiation sources within the Commonwealth. DER does not, however, have the power to regulate, license or control nuclear reactors or operations which are regulated by the federal government. One of DER's primary functions is to evaluate the hazards associated with the use of radiation. The activities of DER and other agencies including the Department of Health in connection with the TMI-2 accident are discussed more fully in the report prepared by the Health Subcommittee.

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[28] The Pennsylvania Department of Health originally was granted responsibility under this Act; however, in 1970 these responsibilities were transferred to the Department of Environmental Resources.

E. State Ability to Participate in Federal Decisions.

Although state regulation of nuclear power plants is limited, there are a number of ways in which states may participate in proceedings affecting nuclear power plants, e.g., as an interested state, an intervenor or *amicus curiae*.

The NRC's regulations provide a special status for state and local governments. This is known as "interested state" status. In this capacity state and local governments "interested" in any NRC hearing have the automatic right to participate in the hearing, introduce evidence, interrogate witnesses and advise the Commission without taking a position on the issues before the Commission.[29] A state may also request full intervenor status, which allows it to present contentions about the alleged inadequacies of the proposed facility and to attempt to prove these contentions during the proceedings. In either case, the state is a party to the proceedings. By utilizing these roles states can actively participate in NRC decision-making proceedings.

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[29] 10 C.F.R. § 2.715(c) (1979).

States may also participate in NRC rule-making proceedings by submitting comment in much the same way as would any other organization or member of the general public. When requested by the NRC, or required by the Administrative Procedure Act, state employees or officials may have the opportunity to testify in NRC proceedings, even though the state is not a party to the proceedings as an interested state or an intervenor. In this situation the state is acting as a witness rather than as a party.

Finally, a state can seek status as _amicus curiae_, or friend of the court, in litigation involving a nuclear plant within its borders. Pennsylvania is participating in a suit involving the radioactive wastewater at TMI-2 in such an _amicus_ status. _See_ part III, _infra_.

II

HANDLING OF ACCIDENTS--EMERGENCY RESPONSE.

A. Emergency Response--Federal, State, and Local Supervision and Control.

1. Federal--Federal Disaster Assistance Act and FEMA.

In 1974 Congress adopted the Federal Disaster Relief Act.[30] This Act authorized the President to establish a program of disaster preparedness utilizing the services of all appropriate agencies. Under this Act, the President is authorized to provide technical assistance to the states in the development of the States' emergency programs and to make grants fostering the development and maintenance of disaster preparedness plans.

Once a catastrophe has occurred, the Federal Disaster Assistance Administration enters the picture. The Governor of an area affected by a disaster requests the President for a declaration of emergency or major disaster.[31] Upon such a declaration, the affected state or area qualifies for special emergency assistance. The Governor's request must furnish information describing the state and local efforts being utilized and the type of federal aid necessary.

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[30] 42 U.S.C. § 5121, *et seq*.

[31] The terms "emergency" and "major disaster" are defined in 42 U.S.C. § 5122. An emergency is a catastrophe which re-

This Act authorizes the President to assist state and local governments in the performance of essential community services, in public information work, in technical advice, in the distribution of medicines and food and in the lending or donating of equipment and supplies. It is also provided that the federal government will aid states and local governments in repairing or restoring public facilities belonging to the state or local government and which have been affected or taken away by the calamitous event.

In Reorganization Plan No. 3 of 1978, the President created the Federal Emergency Management Agency (FEMA) as an independent agency in the Executive branch.[32] Five agencies

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quires federal emergency assistance to supplement state and local efforts to save lives and protect property, public health and safety, or to avert or lessen the threat of a disaster. A major disaster is a catastrophe which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Act, above and beyond emergency services by the federal government to supplement the efforts and available resources of states in alleviating damage, loss, hardship or suffering caused by the catastrophe.

[32] 5 U.S.C. Appendix II, at 155 (Supp. 1979).

from the Departments of Defense, Commerce, Housing and Urban Development and the General Services Administration were merged into FEMA, thereby unifying the emergency management and assistance functions of the federal government. FEMA was assigned all the authority and responsibility which had been vested in the Defense Civil Preparedness Agency, the Federal Disaster Assistance Agency and the Federal Preparedness Agency, among others.

In creating FEMA, the President recognized that state and local governments bear the primary responsibility of preserving life and property in emergency situations. FEMA's role, then, is to cooperate with and assist state and local governments.

2. State--Emergency Management Services Code and PEMA.

In Pennsylvania the primary law dealing with the emergency response to accidents is the Pennsylvania Emergency Management Services Code.[33] This Act clarified and strengthened the roles and responsibilities of state and local governments in the prevention of, response to, and recovery from disasters.

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[33] Act of November 26, 1978, P.L. 1332, No. 323, 35 Pa. C.S. § 7101, et seq.

The Code defines a "disaster emergency" as any condition which has or is likely to affect seriously the health, safety or welfare of a substantial number of citizens, and which has been caused by forces "beyond the control of man," by civil disorder or riot, or by other factors. A declaration of a state of emergency is effective for ninety days unless terminated earlier or renewed by the Governor. The General Assembly may terminate a disaster emergency by concurrent resolution at any time.

The Governor is entrusted generally with the responsibility of meeting the dangers presented by disasters to the citizens of the Commonwealth. The Governor has the authority to declare a "disaster emergency" which states the nature of the disaster, the areas threatened, and the conditions causing the disaster. When a disaster has been declared, the Governor is empowered to:

> "(1) Suspend the provisions of any regulatory statute prescribing the procedures for conduct of Commonwealth business, or the orders, rules or regulations of any Commonwealth agency, if strict compliance with the provisions of any statute, order, rule or regulation would in any way prevent, hinder or delay necessary action in coping with the emergency.

> (2) Utilize all available resources of the Commonwealth Government and each political subdivision of this Commonwealth as reasonably necessary to cope with the disaster emergency.
>
> (3) Transfer the direction, personnel or functions of Commonwealth agencies or units thereof for the purpose of performing or facilitating emergency services.
>
> (4) Subject to any applicable requirements for compensation . . ., commandeer or utilize any private property if necessary to cope with the disaster emergency.
>
> (5) Direct and compel the evacuation of all or part of the population from any stricken or threatened area within this Commonwealth if this action is necessary for the preservation of life or other disaster mitigation, response or recovery.
>
> (6) Prescribe routes, modes of transportation and destinations in connection with evacuation.
>
> (7) Control ingress and egress to and from a disaster area, the movement of persons within the area and the occupancy of premises therein.
>
> (8) Suspend or limit the sale, dispensing or transportation of alcoholic beverages, firearms, explosives and combustibles."[34]

The declaration of a disaster emergency also activates the disaster response and recovery aspects of the Commonwealth and local disaster emergency plans.

During any state of disaster, the Governor is also empowered to make arrangements for the purchase or lease from the federal government of temporary housing units. State agencies may implement emergency assignments without regard to certain procedures normally required by laws pertaining to the performance of public contracts.

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[34] 35 Pa. C.S. § 7301(f) (Supp. 1979-80).

The Code also provides for various degrees of civil immunity for Commonwealth employees or contractors who act pursuant to official directions during a disaster emergency. Essentially, employees or contractors are immune when acting under the authority of the Code, unless they acted with gross negligence or were guilty of willful misconduct.

The new Code created the Pennsylvania Emergency Management Agency (PEMA), the purpose of which is to assure the prompt and proper discharge of the basic Commonwealth responsibilities relating to disaster preparedness. PEMA is given the duty of preparing and maintaining a plan "for the prevention and minimization of injury and damage caused by disaster," for prompt and efficient response to disaster, and for emergency relief and recovery. PEMA is directed by the Code to establish an emergency operations center with a statewide system of warning and a system of disaster communications integrated with those of federal, state and local agencies. PEMA is given broad authority for emergency response training and planning, for supervising and coordinating local activities in this regard, and for obtaining assistance in major disasters as provided by the Federal Disaster Relief Act of 1974, discussed above.

The Emergency Management Code contains a specific provision relative to nuclear accidents. PEMA is directed "[t]o respond to disasters relating to atomic energy operations or radioactive objects or materials." There follows an exclusionary stipulation that prevents action by PEMA where the radiation-producing capacity of the objects or materials involved does not exceed the maximum safety limit fixed by the Nuclear Regulatory Commission.

The organization of PEMA is set forth in 35 Pa. C.S. § 7312. Its governance is vested in a body known as the Pennsylvania Emergency Management Council, composed of the Governor, Lieutenant Governor, various members of the Governor's Cabinet, the Speaker of the House of Representatives, the President pro tempore of the Senate, and the minority leaders of the Senate and the House. This council sets the overall policy and direction for the Commonwealth disaster program. To supervise the work and activities of the state disaster program, the Council employs a full-time director and a staff.

3. Multi-State--Interstate Civil Defense and Disaster Compact.

In the Emergency Management Services Code, the Pennsylvania Legislature also adopted the Interstate Civil Defense and Disaster Compact and thereby entered into an agreement with all jurisdictions who have or will adopt this Compact. The Compact has been adopted by all states except California.[35] The purpose of this Compact is to provide mutual aid among the adopting states in any emergency or disaster from any cause including atomic or radiological incidents. Civil defense directors from the adopting states form a committee to formulate plans to prepare for any disaster or emergency.

Each participating state is obligated to formulate civil defense plans for itself. In developing such plans, states are to follow uniform standards and practices to the extent possible.

4. Local--Emergency Management Services Code.

The Emergency Management Services Code also places responsibility on local governments for emergency preparedness and response within their territorial limits.[36]

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[35] 35 Pa. C.S. § 7111.

[36] 35 Pa. C.S.A. § 7501.

The governing body, or the chief executive of a political subdivision, if so authorized, may declare a local disaster emergency upon a finding that such an emergency has occurred or is imminent. This declaration shall last for seven days unless extended. The effect of such a declaration is to activate the response and recovery aspects of the local emergency plans and to authorize the furnishing of aid and assistance thereunder.

All local emergency management organizations are to have a coordinator who shall be responsible for the planning, administration and operation of the local organization. All county and local coordinators are appointed by the Governor upon the recommendation of the county or local governing body.

The powers and duties of political subdivisions at the local level with regard to emergency response capabilities are similar to those of PEMA at the state level. Emergency management planning; training of individuals and groups; organizing the manpower, services, equipment and facilities necessary for disaster readiness; and responding and cooperating with other governmental agencies are at the heart of the local task. It should be noted that a political subdivision does not, however, have the powers of the Governor.

For example, the Act does not authorize local officials to order evacuations.[37]

In sum, the obligation and authority for disaster emergency preparedness, response and recovery exist at all three levels of government, federal, state and local. Each level has the duty to prepare for and respond to disaster emergencies. Cooperation and coordination among the affected governmental bodies are of course, fundamentally important.

5. Proposed Changes in the Involvement of State and Local Emergency Preparedness with NRC Licensing.

Two recent proposals have attempted to tie the response capability of state and local governments into the licensing and operating requirements for nuclear power plants. On November 21, 1979, the NRC notified all licensees that the Commission intended to publish regulations dealing with the licensees' obligations to make certain emergency preparedness arrangements with state and local governments. These regulations will require, inter alia, the submission to the NRC of state, local and operator emergency plans for a determination of acceptability. The NRC is currently receiving comments on these regulations.

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[37] In an informal memorandum opinion, to the Pennsylvania Emergency Management Agency, dated September 14, 1979, the Pennsylvania Department of Justice has expressed its opinion that the authority to order an evacuation is limited to the Governor.

The other recently proposed change in the emergency response requirements of nuclear plants is contained in Senate Bill 562 introduced by Senator Hart. Senate Bill 562[38] is a proposed amendment to Section 103 of the Atomic Energy Act,[39] which would add new conditions to the granting of licenses to operate commercial nuclear plants.

S. 562 would require each applicant for a license to submit the state emergency response plan for nuclear accidents. The NRC would be prohibited from granting a license unless it determines that the plan provides adequate public protection. The bill would also require each state in which a licensed nuclear facility operates to submit to the NRC and to FEMA its emergency response plan to accidents which create an imminent possibility of off-site release of radioactivity. The bill provides that if any of the plans do not comply with the NRC guidelines, the Commission is required to take steps to terminate the operations at the facilities.

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[38] S.562, 96th Cong., 1st Sess., § 202 (1979). These amendments are part of the NRC appropriations bill and have been adopted by the Senate.

[39] 42 U.S.C. § 2133.

The bill would also require the President to prepare a National Contingency Plan to provide for expeditious, efficient and coordinated action to protect public health in the event of an extraordinary nuclear occurrence or events significantly increasing the likelihood of such an occurrence. The plan would create an interagency task force headed by FEMA and including a number of other agencies.[40]

III

LITIGATION AND OTHER LEGAL PROCEEDINGS FROM TMI.

The foregoing sections of this discussion have been devoted to setting forth the main features of the legal matrix in which the accident at TMI occurred, with emphasis on federal occupation of the field of regulating the nuclear energy industry insofar as safety considerations are involved. It has been pointed out, however, that the Commonwealth has a

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40 The President's Commission on the TMI accident has recommended that FEMA should be charged with approving a state's emergency response plan before a utility is granted an operating license for a new nuclear power plant. Report of the President's Commission on the Accident at Three Mile Island, at 76 (1979).

participatory role to play in federal proceedings. The Three Mile Island episode has given rise to both public and private litigation. We turn now to a brief description of these proceedings.

A. City of Lancaster v. Nuclear Regulatory Commission.

On May 21, 1979, the City of Lancaster, the City of Lancaster Water Authority, and an individual plaintiff (hereinafter collectively referred to as the "City"), filed a suit for injunctive relief against the NRC in the United States District Court for the District of Columbia.[41] Metropolitan Edison Company ("Met. Ed.") became a party to the proceedings as an intervenor. The City sought to enjoin the NRC from permitting Met. Ed.'s use of "EPICOR-II". "EPICOR-II" is a waste disposal process which removes radioactive elements from the wastewater. The city alleged that after being treated, the water would be discharged into the Susquehanna River. The City depends upon the Susquehanna River for its water supply and was concerned that there would be a residuum of radioactivity in the treated water. At the time of the filing of this suit, there were approximately 950,000 gallons of radioactive wastewater in the containment building at TMI-2, and that amount was increasing daily.

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[41] No. C.A. 79-1368.

On May 29, 1979, with the consent of the NRC and the City, the district court entered an order under the terms of which the NRC would perform "environmental assessments" prior to permitting the use of "EPICOR-II" to treat the intermediate-level and high-level wastewater, and again prior to permitting the disposal of any wastewater.

On July 6, 1979, the Commonwealth of Pennsylvania filed a motion to participate as amicus curiae in this matter. The Commonwealth sought amicus status so that it could participate in this important public issue without having to align itself with either side. In this fashion the Commonwealth can present its views as issues arise in the litigation without being committed to a particular position. The Commonwealth's motion was granted on July 26, 1979.

Since the entry of the consent decree, the NRC and Met. Ed. have both filed motions to dismiss the City's complaint, claiming that the federal district court does not have the authority to hear the matter. These motions, which are opposed by both the City and the Commonwealth, are currently pending before the court.

B. Other Suits.

On May 25, 1979, shortly after the filing of the City of Lancaster action, the Susquehanna Valley Alliance, comprised of a group of citizens living in the vicinity of TMI-2, and a number of individual plaintiffs filed an action in the federal district court against Met. Ed., the NRC and several other defendants[42] over the issue of the wastewater disposal at TMI-2.

The defendants in this action filed motions to dismiss similar to those filed in the City of Lancaster case. On October 13, 1979, Judge Sylvia Rambo granted defendants' motions and dismissed the complaint. Plaintiffs have filed an appeal with the Court of Appeals for the Third Circuit and attempted to obtain an injunction pending the appeal. The court of appeals denied the injunction after oral argument but granted plaintiffs' request for expedited argument. The court heard argument on the appeal in November, 1979, but has not yet issued its decision.

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[42] No. C.A. 79-658.

C. NRC Proceedings.

1. Licensing proceedings.

TMI-1 Restart. Pursuant to an August 9, 1979, order of the NRC, an Atomic Safety and Licensing Board has been convened to hold hearings and decide whether TMI-1 should be allowed to restart and, if so, under what conditions. Petitions to intervene and contentions were submitted by interested parties. In November, a pre-hearing conference was held to discuss the petitions and contentions. Public hearings are expected to be held in February or March, 1980.

2. Rule-making proceedings.

The NRC has been heavily involved in assessing the causes of the March 28, 1979, accident with the objective of revising its rules and regulations. One of the rule changes which, we understand, is close to being adopted and which has, perhaps, the most direct impact on Pennsylvania, is the proposed change on emergency planning. This proposed rule has been described above in Part II A. 5.

D. Pending Private Lawsuits and Class Action Management.

Within eight days after the TMI-2 accident, the first lawsuit was filed. This action was filed in the Court of Common Pleas of Dauphin County, Pennsylvania, but it was later removed to the United States District Court for the Middle District of Pennsylvania. During the next few weeks, over twenty-five such suits were filed.

Most of these actions were filed as class actions under the Federal Rules of Civil Procedure and have asserted the following causes of action: negligence in the design, manufacture, construction and operation of TMI-2; strict liability not dependent on negligence because of the ultra-hazardous nature of the activity involved; and *de facto* condemnation or taking of plaintiffs' properties. A consolidated class action complaint was filed on June 27, 1979, *Fantasky v. General Public Utilities Corporation*, C.A. No. 79-432, pursuant to Rule 42 of the Federal Rules of Civil Procedure. The consolidated class action complaint purports to represent three classes of plaintiffs: (1) all individuals or firms within a twenty-five mile radius of TMI-2 who suffered economic harm as a result of the nuclear incident; (2) all homeowners or residents within a twenty-five mile radius of TMI-2 who suffered economic harm as a result of the nuclear incident; and (3) all individuals within a twenty-five mile radius who have suffered personal injury, incurred medical expenses or suffered emotional distress as a result of the nuclear incident.

Plaintiffs seek monetary damages for losses sustained, including pain and suffering; an order abating TMI-2 as a nuisance; and the creation of a trust-type fund to pay, during the next twenty years, the cost of medical diagnosis and treatment of cancerous or genetic conditions which might develop as a result of the accident at TMI-2.

Motions to certify the three classes are currently pending before the court, but will probably not be decided until after January 1, 1980.

All complaints filed subsequent to the class action are being consolidated unless a particular plaintiff can show a reason why his or her case should be treated separately. The purpose for consolidating all actions is to permit the disposition in one proceeding of questions which are common to all cases. After the class certification question is settled, notice will be given to all members of the defined classes, giving them an opportunity to participate in the action.

It should be noted, in the context of pending actions, that insurance carriers have paid to date over one million dollars for lost wages and other claims. Although claimants have not been required to release their causes of action upon receipt of such payments, it is presumed that a number of lawsuits will not need to be commenced because of these payments.

IV

APPLICATION OF STATE AND FEDERAL LAW TO PRIVATE LITIGATION RESULTING FROM RADIATION EXPOSURE.

This portion of the report is designed to provide a basic understanding of that portion of the Atomic Energy Act known as the Price-Anderson Act referred to above on page 5; to describe the effect of a finding that an incident is an "extraordinary nuclear occurrence"; to discuss briefly certain fundamental concepts of tort law, such as strict liability, causation, and statutes of limitation; and to describe Workmen's Compensation laws as they might apply to employees exposed to radiation. Much of what is contained in this portion of the report may have little or no application to the TMI accident as such. It may, however, provide a basis for the consideration of problems which could arise in the future.

A. Price-Anderson Act and Public Liability Claims.

As previously stated, in 1957, Congress amended the Atomic Energy Act of 1954, by adding the Price-Anderson Act.[43] The purpose of the Act was to protect the public and to stimulate the development of private nuclear power plants by providing a fund for the payment of liability claims in the event of a nuclear incident and by limiting the maximum liability in the event of such an incident. The Price-Anderson Act, as amended, provides a three tier system of insurance which is available for the compensation of public liability claims arising out of a nuclear incident.[44] The first tier is based upon a requirement that each licensee, as a condition to the grant of a license, maintain financial protection or the ability to respond in damages for public liability claims in the maximum amount available from private sources. On March 28, 1979, this amount was $140 million.

The second tier of insurance is provided under a deferred premium industry plan whereby each facility is assessed a premium of $5,000,000 in the event that public liability claims exceed the level established by the primary financial protection described above. This is an industry-wide system, which as of March 28, 1979, created an additional pool of $335 million.

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[43] 42 U.S.C. § 2210.

[44] A nuclear incident is any "occurrence . . . causing . . . bodily injury, sickness, disability, death, or loss of or damage to property, arising out of or resulting from the radioactive, toxic, explosive or other properties of source, special nuclear, or byproduct material . . . ." 42 U.S.C. § 2014(q).

The third tier is provided by the federal government. The NRC is required to indemnify and hold harmless licensees from public liability claims in excess of the amounts provided under the first two tiers up to a maximum aggregate limit of $560 million. Because of the second tier deferred premium plan increases with the addition of each new facility, the amount of the government indemnification decreases if and when new facilities are licensed.

In order to stimulate the development of the nuclear industry, and in exchange for the above described system of financial protection, the Price-Anderson Act currently limits the aggregate liability for a single nuclear incident to $560 million.[45] It is recognized, however, that a nuclear incident may create public liability claims in excess of this amount. In the event of an incident which "will probably" result in claims aggregating more than $560 million, the NRC is required to make a survey of the causes and the extent of damage and to report those findings to the congressional Joint Committee on Atomic Energy and the congressmen from the affected areas.[46]

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[45] 42 U.S.C. § 2210(e) (Supp. 1979-80). It should be noted that if because of the construction and licensing of additional power plants, the total amount of financial protection under the first and second tiers described in the text exceeds $560 million, the Act provides that the $560 million liability limit will automatically increase to an amount equal to that provided by the two tiers.

Under the Price-Anderson Act, Congress has pledged as follows:

> "[I]n the event of a nuclear incident involving damages in excess of...[560 million dollars], the Congress will thoroughly review the particular incident and will take whatever action is deemed necessary and appropriate to protect the public from the consequences of a disaster of such magnitude...."[47]

The Subcommittee recognizes that Congress deemed it desirable to limit the payment of claims in excess of $560 million and to approach incidents of greater magnitude on a case by case basis. It should be noted, however, that the statutorily prescribed limits have not been amended since the Act was adopted in 1957. The Subcommittee would recommend to Congress that the statute be amended to increase the liability limits so as to provide a maximum limit which in current dollars is at least equal to the 1957 value of $560 million.

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[46] 42 U.S.C. § 2210(i) (Supp. 1979-80).

[47] 42 U.S.C. § 2210(e) (Supp. 1979-80).

B. Administration of Claims Under the Price-Anderson Act Which May Exceed 560 Million Dollars as the Result of a Nuclear Incident.

In the event that an incident occurs, any interested party may petition the appropriate United States district court for a determination that public liability claims may exceed $560 million. If the court makes such a finding, payments in excess of 15% of the limit of liability, or $84 million, may not be made except with court approval. Before a court may permit payments which exceed this amount, it must determine that the payments will be made in accordance with an approved plan of distribution.[48] Plans, which may be submitted by the NRC or any interested party, must (a) include an allocation of amounts for personal injury claims, property damage claims, and possible latent injuries which may not be discovered until a later time, and (b) establish priorities between claimants and classes of claims to insure the most equitable allocation of available funds.[49]

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[48] 42 U.S.C. § 2210(o)(1) and (2).

[49] 42 U.S.C. § 2210(1)(3) (Supp. 1979-80). In addition, if a petition of the type described above is granted, the NRC

C. Extraordinary Nuclear Occurrence.

In drafting the Atomic Energy Act of 1954, as amended, the Congress did not attempt to establish procedures for prosecuting causes of action asserting legal liability because of a nuclear incident. It is generally believed, therefore, that state law governs and, indeed, one court has so held.[50] The Congress did, however, recognize that certain traditional rules of law might unduly inhibit the prosecution of just claims. It accordingly established, in the Price-Anderson Act, special rules to apply in the event of an "extraordinary nuclear occurrence," or ENO. An ENO is a nuclear incident which is found by the NRC to be of a particular severity, especially in view of its effect upon persons or property offsite.[51] In order to describe the effect

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must, within ninety days, deliver to the Joint Committee on Atomic Energy a report setting forth the estimated requirements for full compensation and relief of all claimants with recommendations of the relief to be provided by Congress. 42 U.S.C. § 2210(o)(4) (Supp. 1979-80).

[50] Silkwood v. Kerr-McGee Corp., No. 76-0888 (W.D. Okla., filed August 16, 1979). This case deals with a number of other issues including: the application of strict liability; punitive damages; causation; pre-trial publicity; and workmen's compensation laws. An appeal by the defendant has been taken to the Court of Appeals for the Eighth Circuit and is now pending.

[51] Regulations promulgated by the NRC and relating to the proceedings and criteria to be employed in determining whether an incident is an ENO are found at 10 C.F.R. § 140.81 *et seq.*

of an ENO determination, it is first necessary to describe briefly a few legal concepts.

The elements or factors which a particular plaintiff must prove in order to recover in a suit for damages will vary depending upon the theory of recovery which has been alleged. For example, if a plaintiff asserts that the injury resulted from negligent conduct by the defendant, the plaintiff must generally prove the following elements:

a. The defendant was under a legal duty to adhere to a standard of conduct which would protect others against an unreasonable risk of harm;

b. The defendant failed to adhere to the required standard of conduct;

c. The defendant's conduct was the cause of the injury; and

d. The plaintiff suffered actual damages which are legally cognizable.

Even though these elements are established, the plaintiff may be barred from recovery if he is shown to have acted in such a manner as to disable himself by his own conduct.[52]

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[52] An example of conduct which may disable a plaintiff from recovery is where the plaintiff knows of the dangers created by the defendant but proceeds to act in spite of those dangers. In such a situation, it may be held that plaintiff is not entitled to recover because he assumed the risk of the injury.

Additionally, the plaintiff must prosecute his claim within the time period called for in the appropriate statute of limitations. Under Pennsylvania law, this period is normally two years after the cause of action accrued.[53]

The effect of the ENO provisions of the Atomic Energy Act is to eliminate any issue of the licensee's negligence, to remove the defenses that a claimant was himself negligent or assumed the risk of harm, and to establish a uniform period of limitations which is three years after the claimant first knew of his injury but not more than twenty years after the incident.[54] Thus, under the ENO concept, a claimant will

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In a similar situation where the plaintiff does not actually know of the risks involved, but where he fails to exercise the proper standard of conduct for his safety under the circumstances, he may be either totally or partially disabled from recovery. Traditionally, this concept was known as contributory negligence and would totally disable a plaintiff from recovery.

In Pennsylvania, the modern concept of "comparative negligence" has been adopted by the legislature and replaces traditional contributory negligence doctrine. 42 Pa. C.S. § 7102(a). Under the comparative negligence concept, recovery is permitted even though the plaintiff acted negligently so long as his negligence is not greater than the defendants. The amount of damages to which the plaintiff would be entitled to recover if he had not been negligent are, however, reduced in proportion to the amount of negligence which is attributable to the plaintiff.

[53] 42 Pa. C.S. § 5524 (Pamphlet 1979).

[54] 42 U.S.C.A. § 2210(n) (Supp. 1979-80). The licensee as defendant is also required to waive any defense based on

normally recover upon proof that an incident occurred and that the claimant was injured or his property damaged as a result of the incident.

With reference to Three Mile Island, the NRC has so far held one hearing, on November 21, 1979, to determine whether the incident of March 28 should be classified as an ENO. No final decision on this matter is expected until early 1980. In view, however, of the relatively small amount of radiation discharged, the NRC has made a preliminary assessment that no finding of an ENO will be made.[55]

D. Legal Concepts Which May Simplify a Claimant's Action Whether or Not an ENO is Declared.

The ENO concept is not designed to alter drastically the state laws concerning tort recovery. It is intended, however, to place claimants and licensees throughout the nation in an equal position with regard to those defenses which are eliminated. Assuming that state law controls, there are

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charitable or governmental immunity. The fact that an ENO is declared, however, does not preclude defenses based on theories that the plaintiff failed to minimize his damages as required by law or that the plaintiff intentionally caused the incident.

[55] Order of the NRC dated July 8, 1979; 44 Fed. Reg. 43128 (July 23, 1979).

certain legal principles which may operate, whether or not an ENO has been declared, to simplify a claimant's action in much the same way as does the declaration of an ENO under the Act. The most noteworthy of these principles include (a) the doctrine of strict liability for an abnormally dangerous activity, and (b) the "date of discovery" theory for purpose of determining the applicable period of limitation.

1. Strict Liability.

The previous section to this report regarding the effect of an ENO briefly describes the elements involved in proving a claim based on negligent conduct. Another possible theory of recovery is based on the doctrine of strict liability for an abnormally dangerous activity. The general principle of this doctrine has been stated as follows:

> "One who carries on an abnormally dangerous activity is subject to liability for harm to the person, land, or chattels of another resulting from the activity, although he has exercised the utmost care to prevent the harm."[56]

When liability is predicated upon the foregoing principle, a claimant is not required to prove negligence; that is, that the defendant failed to exercise reasonable care to prevent the injury. Rather, the defendant will be held liable notwithstanding that he exercised the utmost care in conducting the activity. This "strict liability", or liability without regard to fault, is founded upon a policy of the law that imposes liability upon anyone who, for his own purpose, engages in an activity which creates an abnormal risk of harm to others.[57]

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[56] Restatement (Second) of Torts § 519 (1977).

The question of whether the operation of a nuclear power plant is an abnormally dangerous activity under Pennsylvania law is a question which may be resolved in the TMI litigation. In Silkwood v. Kerr-McGee Corp., supra, the District Court for the Western District of Oklahoma has applied the strict liability concept to radiation induced injuries.[58]

As previously noted, assuming that strict liability is accepted in Pennsylvania,[59] a claimant would not be required to prove negligence. In addition, under the concept of strict liability, the defenses of contributory negligence and comparative negligence are not recognized. Thus, the elements which must be proved by a claimant if strict liability concepts were to apply would be very similar to the elements which must be proved after the declaration of an ENO.

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[57] Restatement (Second) of Torts § 519, comment d at 35 (1977).

[58] There is respectable authority, in current legal literature, that the doctrine of strict liability should apply to the manufacturer of nuclear power. See, e.g., Restatement (Second) of Torts § 520, comments g and h; Prosser, Law of Torts, § 78 at 516 (4th ed. 1979). This discussion should not be construed as expressing an opinion or recommendation of the Commission concerning the application of strict liability concepts in any pending or future litigation.

[59] Pennsylvania has recognized that certain abnormally dangerous activities, such as blasting, will subject a defen-

An additional benefit may be available to a claimant, however, in the event of an ENO, for such a finding may preclude a defendant from relying on the defense of assumption of risk. Normally, under strict liability concepts, assumption of risk is a defense.[60]

2. Statute of Limitations.

Another possible beneficial effect, from a claimant's perspective, of the declaration by the NRC that an ENO has occurred is a modification of the time limits within which a claimant may bring his action. If an incident is found to be

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dant to strict liability. Labozzo v. Adam Eidemiller, Inc., 437 Pa. 360, 263 A.2d 432 (1970), citing Federoff v. Harrison Construction Co., 362 Pa. 181, 66 A.2d 817 (1949).

[60] Restatement (Second) of Torts § 523 (1977). Of course, even in an ENO, a claimant will not be permitted to recover if he intentionally and knowingly caused the incident. See discussion at pp. 46-49, supra.

an ENO, the "period of limitation" is statutorily set under the Price-Anderson Act at three years from the date on which the claimant first knew or reasonably could have known of his injury and the cause of the injury. In no event, however, may an action be commenced more than twenty-years after the ENO.

One complicating factor in compensating irradiated victims is that many of the personal injuries that may be sustained are latent, that is, symptoms of the injury or resultant diseases may not appear for months or even years after the exposure. It is entirely conceivable, for example, that an exposure to certain levels of radiation might cause a victim to contract a form of cancer five, ten, or more years after the incident. If the applicable law requires the commencement of an action within two years of the date of the exposure to radioactivity, a victim's claim will be barred before he is aware that an injury has been sustained and before he has suffered any damage. If an ENO has been declared, this result is precluded as long as the claimant brings the action within the prescribed time limits.

When an incident is not found to be an ENO, the period of limitations will probably be that period which is prescribed under the applicable state laws. As previously stated, in Pennsylvania, actions for damages from personal injury, death or personal property normally must be commenced within two years from the date that the cause of action accrued.[61] It is becoming increasingly common for courts to hold that a cause of action accrues at the time that the claimant discovers or should reasonably have discovered that the injury occurred.[62] Where this "discovery" theory applies, the importance of an ENO declaration, from a claimant's perspective, is somewhat reduced, although the three year period may be longer than that applicable under local law.

As the foregoing points out, the declaration of an incident as an ENO can benefit claimants in several ways. The extent of the benefit will, however, depend upon the legal rules which apply in the absence of such a declaration.

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[61] 42 Pa. C.S. § 5524(2) and (3).

[62] See, e.g., Ayers v. Morgan, 397 Pa. 282, 289-90, 154 A.2d 788, 792 (1959) (surgical sponge not removed from body cavity); Acker v. Palena, Pa. Superior Ct. , 393 A.2d 1230 (1978) (medical malpractice for negligent surgical procedure). Both of these cases were decided under statutory provisions which have been repealed and replaced with similar provisions in the Judicial Code.

E. Proof of Causation of Latent Non-Specific Injury or Disease.

Irrespective of whether an incident is recognized as an ENO or whether a state recognizes the concept of absolute liability for abnormally dangerous activities, any alleged victim of radiation exposure must prove that (1) he was exposed to the radiation, and (2) that the exposure caused his injury.

Proof of the amount of exposure can be difficult because the amount of exposure sustained is dependent upon many factors, such as the distance from the radiation source, the length of the exposure, the type of radiation emitted from the source, and the amount of protection from exposure afforded by clothing and structures. In certain situations, it may be necessary to reconstruct models of the accident site. Virtually every case will require the testimony of expert witnesses. The problems of proof in this area, however, are not radically different from those which arise in many types of litigation.

Turning to the matter of proving the cause of physical harm attributable to radiation exposure, it is convenient to differentiate between victims who suffer injuries or diseases which under the current state of medical knowledge definitely can be traced to the radiation exposure and those injuries or diseases which cannot be so traced. It is this latter class of injuries and diseases with which the remaining portions of this section are concerned.

There are many types of diseases which are caused or aggravated by exposure to radiation but which also occur in the general population. Some of these diseases, most notably certain types of cancers, are termed non-specific. Absent unusual circumstances, it is normally impossible to determine whether a particular case of a non-specific disease has been caused by exposure to radiation or is a result of the natural incidence factor within the general population. The most that can be established is that for that group of individuals which has been exposed to radiation, the incidence over time of the non-specific disease is higher than the incidence in a control group consisting of individuals who have not been exposed to the radiation. It is possible, of course, to infer that the radiation caused certain of the individuals in the exposed group to contract the disease when the statistical incidence in the exposed group is much higher than in the general population. The question thus becomes how to satisfy the typical burden of proving causation, e.g., that it is more likely than not that the irradiation was a substantial factor in causing the particular case of the non-specific disease.[63]

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[63] For a case demonstrating the problem of proving causation, see Mahoney v. United States, 220 F.Supp. 832 (E.D. Tenn. 1963), aff'd., 339 F.2d 605 (6th Cir. 1964).

The causation problem has been described in detail by Professor Samuel D. Estep in an article published in 1960.[64] According to Professor Estep, the normal incidence of a particular non-specific disease, such as leukemia, normally can be ascertained. This normal incidence factor will remain constant. With an increase in the amount of radiation to which a given population group is exposed, the number of cases of leukemia will increase. The incremental increase constitutes the number of cases "caused" by the exposure to radiation. As the amount of exposure increases there is a point at which the aggregate number of leukemia cases is twice the normal incidence. The amount of exposure that is required to produce this phenomenon is termed a "doubling dose." Professor Estep contends that the legal phrase "more likely than not" can be equated roughly with a 50+ percent likelihood that a particular case was caused by radiation exposure.[65] Under such a theory, a claimant would be entitled to recover only upon a showing that he had been exposed to radiation in excess of a doubling

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64 Estep, Radiation Injuries and Statistics: The Need for a New Approach to Injury Litigation, 59 Mich. L. Rev. 259 (1960).

65 This is not completely accurate from a legal perspective; however, it does provide an excellent vehicle for conceptualizing the problem.

dose. Below such an exposure, no leukemia victim could recover because it could not be said that it was more likely than not that the particular case was caused by irradiation. Above such an exposure, all persons contracting leukemia would recover because in each case it could be found that it is more likely than not that the particular case was caused by the exposure. The foregoing results would be reached even though it is agreed that (a) for exposures below a doubling dose, there were a number of radiation-caused cases of leukemia, and (b) for exposures above a doubling dose there were a number of naturally caused cases of leukemia.

While the foregoing is a simplified synopsis of an extremely complicated subject it does point out the causation problem. It is submitted that under the prevailing methods for establishing the right to compensation or damages due to physical injury, the problems regarding proof of causation of non-specific diseases or injuries resulting from radiation exposure create the most serious potential bar to recovery.

F. Claims of Employees of the Atomic Energy Industry.

According to the Report of the President's Commission on the Accident at Three Mile Island, the greatest exposure to radiation at TMI was sustained by Met. Ed. employees. Many of the considerations discussed previously, such as proof of causation and periods of limitation, are relevant to claims for compensation under workmens' compensation and occupational disease acts.

It should be noted that the workmen's compensation laws are effectively exempted from the liability limits of the Price-Anderson Act since that Act is limited to liability for "public liability" claims.[66] By definition, public liability does not include "claims under State or Federal workmen's compensation acts of employees. . . who are employed at the site of and in connection with the activity where the nuclear incident occurs".[67]

As in most states, Pennsylvania has enacted Workmen's Compensation and Occupational Disease Acts. The primary purpose of these Acts is to compensate employees, within statutorily prescribed limits, for occupational injuries and diseases. Both statutes as enacted in Pennsylvania provide certain coverage for employees who have been exposed to radiation and thereby suffer injury or disease.[68]

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[66] 42 U.S.C. §§ 2210(d) and 2014(t) (Supp. 1979-80).

[67] 42 U.S.C. § 2014(w).

[68] The term "injury" under The Workmen's Compensation Act includes all injuries sustained while an employee is actually

As a general proposition, it has been held that recovery is predicated upon a showing by the employee-petitioner that (1) he has sustained disability or injury resulting from a disease defined in one of the Acts, and (2) that the disease is one which arose out of and in the course of his employment. Consolidation Coal Co. v. Workmen's Compensation Appeal Board, 37 Pa. Commonwealth Ct. 412, 391 A.2d 14 (1978) (decision under The Workmen's Compensation Act).

Both of these elements create problems in proving causation similar to those previously discussed. The second element is, however, ameliorated somewhat by statute. Both Acts provide that where an employee was employed in any occupation or industry in which the occupational disease is a hazard, it shall be presumed that the employee's occupational disease arose out of and in the course of his employment.[69] In

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engaged in the furtherance of the business of the employer and encompasses occupational diseases as defined by the Act. 77 P.S. § 411(2) (Supp. 1979-80). The term "occupational disease" is defined in The Workmen's Compensation Act to include "[r]adium poisoning or disability, due to radioactive properties of substances. . . in any occupation involving direct contact with, handling thereof, or exposure thereto. 77 P.S. § 27.1(f) (Supp. 1979-80). An indentical definition is contained in the Occupational Disease Act. Occupational disease is also defined generally in both Acts to include any disease that has not been listed but which nevertheless meets certain criteria. These definitions are similar but not identical. See 77 P.S. § 27.1 and 77 P.S. § 1208(n).

[69] 77 P.S. § 1401(f) (Supp. 1979-80); 77 P.S. § 431 (Supp. 1979-80).

the case of radiation related injuries, it is likely that if an employee proves that his injury is caused by radiation, he will have little difficulty in proving that it arose out of and in the course of his employment. The more difficult burden is embodied in the first element set forth above. An employee who has been exposed to radiation must prove that the disease from which he suffers is "due to" or caused by contact with radioactive substances. It may be relatively easy to establish this causal relationship in situations where exposure has been sufficient to create physical injuries such as radiation burns. Absent physical manifestations, or a significant increase in the incidence of a disease as compared with the normal population, the problems discussed in the preceding section exist.[70]

Another significant problem in obtaining compensation under The Workmen's Compensation and Occupational Disease Acts results from the time periods established in the Acts. Occupational disease claims under The Workmen's Compensation Act are barred if they are not brought within 300 weeks after the last date of employment in the industry. Under The Occupational Disease Act this time period is set at four years after the last date of employment. As previously mentioned, many diseases which result from radiation exposure are latent. It is believed that the period of latency for some forms of cancer may be twenty years or more. Employees who are afflicted with cancer several years after leaving the industry or retiring cannot recover.

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[70] See, e.g., Mahoney v. United States, 220 F. Supp. 823 (E.D. Tenn. 1963), aff'd., 339 F.2d 605 (6th Cir. 1964).

It should be noted of course that The Workmen's Compensation and Occupational Disease Acts apply to all industries in Pennsylvania. The rules and problems associated with causation and periods of limitation may apply equally to those other industries. Any general legislative action which would alter the compensation schemes encompassed in The Workmen's Compensation and Occupational Disease Acts will require a substantial amount of additional study by the Legislature. The Subcommittee would recommend, however, that the terms radium poisoning and disability which have remained unchanged since 1939, should be reviewed by the appropriate authorities to insure that they are sufficient and that they adequately cover the harms associated with employment in the nuclear industry in Pennsylvania.

V

RECOMMENDATIONS WITH RESPECT TO LEGAL ASPECTS OF TMI.

This Subcommittee recommends that the Commission adopt the following conclusions and recommendations:

1. Recognizing that legislation and regulation in the area of safety in the design, construction and operation of nuclear power plants has been largely preempted by the federal government, the Commission urges the greatest possible participation by appropriate authorities of the Commonwealth of Pennsylvania in the federal government's licensing and rule-making proceedings, to the end that reasonable maximum environmental and safety standards are achieved.

2. We recommend that the Pennsylvania Legislature be urged to adopt legislation planning for and regulating to the fullest permissible extent the sites for and the environmental acceptability of proposed and future power plants including nuclear power plants. In addition, Congress should be urged to adopt legislation granting specific authority to states to determine the environmental acceptability of proposed nuclear power plant sites.

3. We recognize that the Price-Anderson Act provides a limited guarantee of monetary protection for persons sustaining injury as a result of a nuclear incident when licensee liability is present. At this time we see no need for a drastic change in that statute. We do, however, believe that it should be updated immediately as far as the monetary limits of insurance and indemnity are concerned, even though the present limits may be adequate for TMI claimants. It goes without saying that the value of the dollar has shrunk drastically due to inflation in recent years. We therefore recommend that Congress be requested to increase the $560 million liability limitation set by the Price-Anderson Act, 42 U.S.C.A. § 2210(e), at least to the extent necessary to reflect the present value of the dollar in relation to its value in 1957 when the statute was enacted. In connection with this matter Congress should consider increasing the standard deferred premium set forth in 42 U.S.C.A. § 2210(b) (Supp. 1979) to an amount greater than $5 million in order to allocate to the nuclear industry an appropriate amount of any increase in the § 2210(e) liability limits.

4. We note that Section 2210(p) of the Price-Anderson Act requires that the NRC submit to Congress by August 1, 1983, a detailed report concerning the need to

continue or modify the provisions of the Price-Anderson Act. The report is to take into account "the conditions of the nuclear industry, availability of private insurance, and the state of knowledge concerning nuclear safety at that time". It is recommended that prior to January 1, 1983, the Pennsylvania Insurance Department make its own study of this Act and submit its findings and recommendations to the NRC for the Commissions consideration in the formulation of its 1983 report. We suggest that any such Pennsylvania study consider a possible expansion or clarification of Section 2210(e) of the Act as to the procedure to be followed to insure full payment of meritorious claims should the aggregate of such claims exceed the dollar limitations of the Act.

5. We recommend that the Pennsylvania Department of Labor and Industry review the definitions of "radium poisoning" and "disability" contained in the Pennsylvania Workmens' Compensation Act and the Pennsylvania Occupational Disease Act to ensure that they are adequate in light of current medical knowledge.

Respectfully Submitted,

Clifford Jones
Frank Townend
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Legal Subcommittee

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